

What is claimed is:

1. A printer power supply controlling apparatus provided in a printer, comprising:
a printer driving power supply which receives power from an external power and generates a voltage for driving the printer;
a printer driving power supply controlling unit which controls the printer driving power supply;
a switch which is switchable on or off according to a manipulation of a user;
a power-off signal detection driving unit which switches off the printer driving power supply in response to a detection of a predetermined printer driving power-off signal; and
a switch-on detection transmitting unit which detects whether the user switch is in an on state, and upon detecting that the user switch is in the on state, transmits a switch-on signal to the printer driving power supply controlling unit, wherein:
when the switch-on signal is received at the printer driving power supply controlling unit with the printer driving power supply on, the printer driving power-off signal is generated by the printer driving power supply controlling unit and transmitted to the power-off signal detection driving unit so as to turn off the printer driving power supply.
2. The printer power supply controlling apparatus of claim 1, further comprising a power-on signal detection driving unit which turns on the printer driving power supply when a predetermined printer driving power-on signal is detected.
3. The printer power supply controlling apparatus of claim 2, wherein the power-on signal detection driving unit comprises a first switching device that switches on in response to the printer driving power-on signal, and a first photo coupler driven in response to the switching on of the first switching device to turn on the printer driving power supply.
4. The printer power supply controlling apparatus of claim 2, wherein the printer driving power-on signal is generated to turn on the printer driving power supply when a host, which is connected with the printer, is turned on.
5. The printer power supply controlling apparatus of claim 3, wherein the printer driving power-on signal is generated to turn on the printer driving power supply when a host, which is connected with the printer, is turned on.
6. The printer power supply controlling apparatus of claim 2, wherein the printer driving power-on signal is generated to turn on the printer driving power supply in response

to a predetermined printing command received from a host, which is connected with the printer.

7. The printer power supply controlling apparatus of claim 3, wherein the printer driving power-on signal is generated to turn on the printer driving power supply when there is a predetermined printing command received from a host, which is connected with the printer.

8. The printer power supply controlling apparatus of claim 1, wherein the power-off signal detection driving unit comprises a second switching device that switches on in response to the printer driving power-off signal, and a photo coupler driven in response to the switching on of the second switching device to turn off the printer driving power supply.

9. The printer power supply controlling apparatus of claim 1, wherein the printer driving power-off signal is generated to turn off the printer driving power supply when a predetermined time has elapsed after the printer is set to a sleep mode.

10. The printer power supply controlling apparatus of claim 8, wherein the printer driving power-off signal is generated to turn off the printer driving power supply when a predetermined time has elapsed after the printer is set to a sleep mode.

11. The printer power supply controlling apparatus of claim 1, wherein the printer driving power-off signal is generated to turn off the printer driving power supply when a host, which is connected with the printer, is turned off.

12. The printer power supply controlling apparatus of claim 8, wherein the printer driving power-off signal is generated to turn off the printer driving power supply when a host, which is connected with the printer, is turned off.

13. The printer power supply controlling apparatus of claim 1, wherein the printer driving power-off signal is generated to turn off the printer driving power supply when the printer does not perform a printing operation for a predetermined time.

14. The printer power supply controlling apparatus of claim 8, wherein the printer driving power-off signal is generated to turn off the printer driving power supply when the printer does not perform a printing operation for a predetermined time.

15. The printer power supply controlling apparatus of claim 1, wherein the switch-on detection transmitting unit comprises a photo coupler which is driven in response to the switching on of the switch to transmit the switch-on signal to the printer driving power supply controlling unit.

16. The printer power supply controlling apparatus of claim 8, wherein the switch-on detection transmitting unit comprises a second photo coupler which is driven in response to the switching on of the switch to transmit the switch-on signal to the printer driving power supply controlling unit.

17. A method of controlling power a which is provided in a printer and which receives power from an external power supply and to generate a voltage for driving the printer, a printer driving power supply controlling unit which controls the printer driving power supply, and a switch which switches on or off according to a manipulation of a user, the method comprising:

setting the switch to the on-state while the printer driving power supply is on and generating a switch-on signal in response;

transmitting the switch-on signal to the printer driving power supply controlling unit;
and

transmitting the power-off control signal to the printer driving power supply, to turn off the printer driving power supply.

18. The method of claim 17, further comprising: controlling the printer driving power supply to turn on when the printer power supply is in an off-state and either the switch is set to the on-state or a predetermined printer driving power-on signal is generated.

19. The method of claim 18, wherein the controlling of the printer driving power supply to be turned on further comprises: generating the printer driving power-on signal to turn on the printer driving power supply when a host, connected with the printer, is turned on.

20. The method of claim 18, wherein the controlling of the printer driving power supply to be turned on further comprises:

generating the printer driving power-on signal to turn on the printer driving power supply in response to a predetermined printing command from a host, which is connected with the printer.

21. The printer power supply controlling method of claim 19, wherein the controlling of the printer driving power supply to be on further comprises:

generating the printer driving power-on signal to turn on the printer driving power supply in response to a predetermined printing command from a host, which is connected with the printer.

22. The printer power supply controlling method of claim 17, wherein the controlling of the printer driving power supply to turn off further comprises:

generating the printer driving power-off signal to turn off the printer driving power supply when a predetermined time has elapsed after a setting of the printer to sleep mode.

23. The printer power supply controlling method of claim 17, wherein the controlling of the printer driving power supply to turn off further comprises:

generating the printer driving power-off signal to turn off the printer driving power supply when a host, which is connected with the printer, is turned off.

24. The printer power supply controlling method of claim 23, wherein the controlling of the printer driving power supply to turn off further comprises:

generating the printer driving power-off signal to turn off the printer driving power supply when a host, which is connected with the printer, is turned off.

25. The printer power supply controlling method of claim 17, wherein the controlling of the printer driving power to be turned off further comprises:

generating the printer driving power-off signal to turn off the printer driving power supply when the printer does not perform a printing operation for a predetermined time.

26. The printer power supply controlling method of claim 23, wherein the controlling of the printer driving power to be turned off further comprises:

generating the printer driving power-off signal to turn off the printer driving power supply when the printer does not perform the printing operation for a predetermined time.

27. A power supply apparatus for reducing power consumption for a standby operation, comprising:

a first rectifier circuit which rectifies an AC voltage and outputs a first resultant voltage;

a transformer having a primary winding which receives the first resultant voltage, and at least one secondary winding coupled with the primary winding;

a field effect transistor (FET) installed to turn on/off a supply of electric current to the primary winding;

at least one second rectifier circuit which rectifies a voltage induced at the secondary winding and outputs a second resultant voltage;

a feedback unit which compares the second resultant voltage and a target value, and outputs a feedback signal according to the comparison result;

a pulse width modulator which controls an on/off state of the FET in response to the feedback signal; and

a switch which, when manipulated by a user, selectively causes the feedback unit to output a signal that causes the pulse width modulator to turn off the FET regardless of the output voltage of the second rectifier circuit.

28. The power supply apparatus of claim 27, wherein the feedback unit comprises:
a photo coupler comprising:

a photo diode having one end connected with the second resultant voltage, to illuminate the photo diode in response to a current flow through the photo diode, and

a photo transistor which applies a signal corresponding to the illumination of the photo diode to the pulse width modulator as the feedback signal; and

an error amp which turns the photo diode on and off in accordance with the comparison result.

29. An apparatus for providing power to a printer, comprising:

a controller;

a user operable switch; and

a switching mode power, comprising:

a transformer which converts primary power to secondary power in response to repetitive switching of a current in a primary winding of the transformer and supplies the secondary power to the printer,

an electronic switch which performs the repetitive switching in response to a pulse width modulated (PWM) control signal, and

a pulse width modulator which outputs the PWM control signal in response to a power on control signal output by the controller or by an operation of the user operable switch and stops the output of the PWM control signal in response to a power off control signal;

wherein the controller:

generates the power on control signal in response to a predetermined printing command, if the PWM control signal is not currently being output to the electronic switch;

generates the power off control signal in response to a determination that a printing operation has not occurred for a predetermined period of time; and

generates the power off signal in response to an operation of the user operable switch, if the PWM control signal is currently being output to the electronic switch.

30. The apparatus of claim 29, further comprising:

a photo coupler comprising a photo diode and a photo transistor, the photo diode serially connected between the user operable switch and an input of the PWM modulator and which communicates the operation of the user operated switch to the PWM modulator, the photo transistor having a collector connected to an input of the controller and a base which optically communicates with the photo diode, wherein:

if the PWM control signal is currently being output to the electronic switch and the user operable switch is operated, the photo diode and the photo transistor communicate a signal to the controller to output the power off signal to the PWM modulator.